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EXAMINER	
CEHIC, KENAN	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/549,588	RUG ET AL.	
	Examiner	Art Unit	
	KENAN CEHIC	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 15-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 15-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 September 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features in claim 1 lines 19-26 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 1-12 objected to because of the following informalities:

For claim 1, “a processing unit”, in line 17, seems to refer back to either " a first processing unit” or “a second processing unit”. If this is true, it is suggested to change this limitation to one that refers back to the above listed limitations.

For claim 1, "a participant” in line 24, seems to refer back to a participant in line 1. If this is true, it is suggested to change the limitation to "the participant”. Similar problems exist in claim 1 line 26.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 1, “the processing unit” in line 19, lacks antecedent basis. It is not clear to which processing unit (first processing unit, second processing unit, or a processing unit”) refers to. For claim 1, “the participant” in line 25, lacks antecedent basis. It is not clear if the limitation refers to “a participant” in line 1 or “a participant" in line 24.

For claim 10, “the participant” in line 2 lacks antecedent basis. It is not clear to which participant, of the multiple participants recited in claim 1, the applicant is referring to.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 15-17 rejected under 35 U.S.C. 102(b) as being anticipated by Karbowiak et al. (US 4,663,748).

For claim 15, Karbowiak discloses a communication system (see column 2 lines 16-18 "communication system") for directed communication (see fig. 17; 14a-b, 15a-b) between participants (see fig 1; Node) of the communication system (see column 2 lines 16-18 "communication system"), having one central participant (see Figure 1, "NODE" ,11,12,13; col 10 line 40-67 "node equipped with a Network Supervision package…") and at least one secondary participant (see Figure 1, "NODE" ,11,12,13) :

a first communication path (10) (see Figure 1, 15) and a second communication path (20) (see Figure 1, 14), the communication paths (see Figure 1, 14 and 15) in the communication system see column 2 lines 16-18 "communication system") having a double-ring topology (see Figure 1, 11, 14, 15) that is configured to operate in contrary directions (see Figure 1, 14 and 15, note arrows)

a first processing unit (1 1) (see Figure 17 , 91, 92, 93, 12) configured to process (see column 28 lines 14-18 "performs the functions of the RXM..TXM…RRM" and column 28 lines 34-47 "Clock Decoder…clocking information which is used to synchronise the PLL")

information signals (see column 28 lines 25-30 "up-ring link-signal") , obtained (see column 28 lines 25-30 "Receive Data") via the first communication path (lo) (see Figure 17, 15b) , andlor to (see column 28 lines 25-30 "generate") and send (see column 28 lines 30-33 "down-ring signals are in turn interfaced to …15a") information signals (see column 28 lines 25-30 "down-ring link-signal") via the first communication path (see Figure 17, 15a), and a second processing unit (21) (see Figure 17 , 91, 92, 93, 12), configured to process (see column 28 lines 14-18 "performs the functions of the RXM..TXM…RRM" and column 28 lines 34-47 "Clock Decoder…clocking information which is used to synchronise the PLL") information signals (see column 28 lines 25-30 "up-ring link-signal") received (see column 28 lines 25-30 "Receive Data") via the second communication path (see Figure 17b, 14a)

(20) and/or to generate (see column 28 lines 25-30 "generate") and send (see column 28 lines 30-33 "down-ring signals are in turn interfaced to …14b") information signals (see column 28 lines 25-30 "down-ring link-signal") via the second communication path (see Figure 17, 14b), and a first activatable coupling positioned (see Figure 17, 94 and Figure 20, 122, "LINE SIGNAL from NODE" and line connecting 122 to 124; see Figure 17, 94, "Liu 11" and Figure 1, "NODE " and 11) between (see Figure 17, 94 and Figure 20, 122, "UP-RING", 123, "LINE TO SIGNAL", "LINE SIGNAL and column 28 lines 62-

66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair"), the first communication path (10) (see Figure 1, 15 and Figure 20, 15a, 15) and the second communication path (20) (see Figure 1, 14 and Figure 20, 14a, 14b), such

that upon activation (column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair") of the first activatable coupling (see Figure 17, 94 and Figure 20, 122, "LINE SIGNAL from NODE" and line connecting 122 to 124) information signals (see column 4 lines 65-68 "data flow") are picked up (see column 4 line 65 through column 5 line 1 "reconfigures its link connections and Figure 2; 10 (top of circle), 14, 15 and "DATA FLOW") from the first communication path (10) (see Figure 2, 15) and delivered (see Figure 2, 10 (top of circle), data flow is wrapped around from 15 to 14, because of failed link) to the second communication path (see Figure 2, 14), wherein a location for delivery (see column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair") to the first activatable coupling (see Figure 17, 94 and Figure 20, 122, "LINE SIGNAL from NODE" and line connecting 122 to 124) is positioned downstream ((see Figure 20, 122 and "LINE SIGNAL from NODE" and Figure 17, 95, 93, 91, 12; the multiplexor is downstream from the processing unit)in a signal travel direction (see Figure 20, 122 and "LINE SIGNAL from NODE" and Figure 17, 95) of a processing unit (2 1) (see Figure 17 , 91, 92, 93, 12) of the second communication path (20) (see Figure 20, 14b and Figure 17, 14b), wherein the processing unit (1 l,21) (see Figure 17 , 91, 92, 93, 12)

checks the information signal (see column 4 lines 65-67 "synchronization signals") for its presence (see column 4 lines 65-67 "detect a loss of synchronization signals"), and one phase locked loop (see Figure 18, 107 and column 18 lines 36 through col 19 line 15 "nodes use second order PLLs to recover the timing information…a closed loop of mutually coupled PLLs results with the ring locking to the mean rate…each PLL…PLL in each nodes.."; col 28 line 34-48 "PLL") is provided (see Figure 17 , 92) in the participant (1) (see Figure 1, "NODE" ,11,12,13), wherein said one phase locked loop per communication path is configured for for phase preparation (see Figure 18, 107 and column 18 lines 36 through col 19 line 15 "nodes use second order PLLs to recover the timing information…a closed loop of mutually coupled PLLs results with the ring locking to the mean rate…each PLL…PLL in each nodes.."; col 28 line 34-48 "PLL") of the received information signal (see Figure 17; 96, 15b, 14a and Figure 18, "LINE SIGNAL").

For claim 16, Karbowiak discloses wherein the communication system is embodied with double-ring topology (see Figure 1, 11, 14, 15), with two communication paths (10, 20), each annularly closed (see Figure 1, 11, 14, 15).

For claim 17, Karbowiak discloses, wherein the information signal travel in the two communication paths is effected in contrary directions (see Figure 1, 14 and 15, note arrows)

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-4, 6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karbowiak et al. (US 4,663,748) in view of Yasue (US 4,594,709) and Richard et al (US 5,079,766), as evidenced by Dellow (US 2003/0020522)

For claim 1, Karbowiak discloses a participant (1) (see Figure 1, "NODE" ,11,12,13) of a communication system (see column 2 lines 16-18 "communication system"), comprising:

a first communication path (10) (see Figure 1, 15) and a second communication path (20) (see Figure 1, 14), the communication paths (see Figure 1, 14 and 15) in the communication system (see column 2 lines 16-18 "communication system") having a double-ring topology (see Figure 1, 11, 14, 15) that is configured to operate in contrary directions (see Figure 1, 14 and 15, note arrows)

a first processing unit (1 1) (see Figure 17 , 91, 92, 93, 12) configured to process (see column 28 lines 14-18 "performs the functions of the RXM..TXM…RRM" and column 28 lines 34-47 "Clock Decoder…clocking information which is used to synchronise the PLL")

information signals (see column 28 lines 25-30 "up-ring link-signal") , obtained (see column 28 lines 25-30 "Receive Data") via the first communication path (lo) (see Figure 17, 15b) , andlor to generate (see column 28 lines 25-30 "generate") and send (see

column 28 lines 30-33 "down-ring signals are in turn interfaced to …15a") information signals (see column 28 lines 25-30 "down-ring link-signal") via the first communication path (see Figure 17, 15a), and a second processing unit (21) (see Figure 17 , 91, 92, 93, 12), configured to process (see column 28 lines 14-18 "performs the functions of the RXM..TXM…RRM" and column 28 lines 34-47 "Clock Decoder…clocking information which is used to synchronise the PLL") information signals (see column 28 lines 25-30 "up-ring link-signal") received (see column 28 lines 25-30 "Receive Data") via the second communication path (see Figure 17b, 14a)

(20) and/or to generate (see column 28 lines 25-30 "generate") and send (see column 28 lines 30-33 "down-ring signals are in turn interfaced to …14b") information signals (see column 28 lines 25-30 "down-ring link-signal") via the second communication path (see Figure 17, 14b), and a first activatable coupling positioned (see Figure 17, 94 and Figure 20, 122 or 121, "LINE SIGNAL from NODE" and line connecting 122 to 124; see Figure 17, 94, "Liu 11" and Figure 1, "NODE " and 11) between (see Figure 17, 94 and Figure 20, 122, "UP-RING", 123, "LINE TO SIGNAL", "LINE SIGNAL and column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair"), the first communication path (10) (see Figure 1, 15 and Figure 20, 15a, 15) and the second communication path (20) (see Figure 1, 14 and Figure 20, 14a, 14b), such

that upon activation (column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair") of the first activatable coupling (see Figure 17, 94 and Figure 20, 122, "LINE SIGNAL

from NODE" and line connecting 122 to 124) information signals (see column 4 lines 65-68 "data flow") are picked up (see column 4 line 65 through column 5 line 1 "reconfigures its link connections and Figure 2; 10 (top of circle), 14, 15 and "DATA FLOW") from the first communication path (10) (see Figure 2, 15) and delivered (see Figure 2, 10 (top of circle), data flow is wrapped around from 15 to 14, because of failed link) to the second communication path (see Figure 2, 14), wherein a location for delivery (see column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair") to the first activatable coupling (see Figure 17, 94 and Figure 20, 122 or 121, "LINE SIGNAL from NODE" and line connecting 122 to 124) is positioned downstream (see Figure 20, 122 and "LINE SIGNAL from NODE" and Figure 17, 95, 93, 91, 12; the multiplexor is downstream from the processing unit)in a signal travel direction (see Figure 20, 122 and "LINE SIGNAL from NODE" and Figure 17, 95) of a processing unit (2 1) (see Figure 17 , 91, 92, 93, 12) of the second communication path (20) (see Figure 20, 14b and Figure 17, 14b), wherein the processing unit (1 l,21) (see Figure 17 , 91, 92, 93, 12) checks the information signal (see column 4 lines 65-67 "synchronization signals") for its presence (see column 4 lines 65-67 "detect a loss of synchronization signals"), and one phase locked loop (see Figure 18, 107 and column 18 lines 36 through col 19 line 15 "nodes use second order PLLs to recover the timing information…a closed loop of mutually coupled PLLs results with the ring locking to the mean rate…each PLL…PLL in each nodes.."; col 28 line 34-48 "PLL") is provided (see Figure 17 , 92) in the participant (1) (see Figure 1, "NODE" ,11,12,13), wherein said one phase locked loop

per communication path is configured for for phase preparation (see Figure 18, 107 and column 18 lines 36 through col 19 line 15 "nodes use second order PLLs to recover the timing information…a closed loop of mutually coupled PLLs results with the ring locking to the mean rate…each PLL…PLL in each nodes.."; col 28 line 34-48 "PLL") of the received information signal (see Figure 17; 96, 15b, 14a and Figure 18, "LINE SIGNAL").

For claim 2, Karbowiak discloses wherein the pickup of the first activatable coupling (see Figure 17; 94 and Figure 20; 122) is located in the participant (see Figure 1, "NODE" ,11,12,13) downstream (see Figure 20, 122 and "LINE SIGNAL from NODE" and Figure 17, 95; the multiplexor is downstream from the processing unit) in the signal travel direction (see Figure 20, 122 and "LINE SIGNAL from NODE" and Figure 17, 95) of the processing unit (1 1) (see Figure 17 , 91, 92, 93, 12) of the first communication path (1 0) (see Figure 20, 15 and Figure 17, 15b and column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair") .

For claim 3, Karbowiak discloses wherein the first activatable coupling (see Figure 17, 94 and Figure 20, 122, "LINE SIGNAL from NODE" and line connecting 122 to 124) includes a first intermediate connecting line (13) (see Figure 20, "LINE SIGNAL from NODE"), for connecting (see Figure 2, 10 (top of ring), 15, 14; path 15 is wrapped to path 14 and column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair") the first

communication path (10) (see Figure 20; 15) to the second communication path (20) (see Figure 20, 14b),

and a first switchover element (22) (see Figure 20, 122), inserted into both (see Figure 20, 122; 122 is connected to both 14b and signal from node which can be any input/output of 14a, 14b,15, 15a of Figure 20) the first intermediate connecting line (see Figure 20, "LINE SIGNAL from NODE") and the second communication path (20) (see Figure 20, 14b).

For claim 4, wherein the first switchover element (22) (See Figure 20, 122) is a multiplex (see column 28 lines 60-64 "multiplexors…122) with two inputs (see column 28 lines 60-64 "two-input") and one output (see Figure 17, 14b, 126 and 122) and the inputs (see Figure 20, 14a and "LINE SIGNAL from NODE") are switchable selectively to the output (see column 28 lines 57-66 "allow selection of the source of the signal transmitted").

For claim 6, Karbowiak discloses, wherein a second activatable coupling (23, 12) (see Figure 17, 94 and Figure 20, 122 or 121, "LINE SIGNAL from NODE" and line connecting 122 to 124; see Figure 17, 94, "Liu 11" and Figure 1, "NODE " and 11) is located between the first communication path (10) and the second communication path (20) (see Figure 17, 94 and Figure 20, 122, "UP-RING", 123, "LINE TO SIGNAL", "LINE SIGNAL and column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair"), such that upon activation of the second activatable coupling (column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b

either the node or the other link-pair"), information signals are picked up from the second communication path (20) and delivered to the first communication path (10) (see column 4 line 65 through column 5 line 1 "reconfigures its link connections and Figure 2; 10 (top of circle), 14, 15 and "DATA FLOW"; col 28 line 55-67), and wherein a location for delivery to the second activatable coupling is located downstream in the signal travel direction of the processing unit (11) of the first communication path (10) (see Figure 20, 122 and "LINE SIGNAL from NODE" and Figure 17, 95, 93, 91, 12; the multiplexor is downstream from the processing unit), and wherein pickup of the second activatable coupling) (see column 4 line 65 through column 5 line 1 "reconfigures its link connections and Figure 2; 10 (top of circle), 14, 15 and "DATA FLOW"; col 28 line 55-67) is expediently located downstream in the signal travel direction of the processing unit (21) of the second communication path (see Figure 20, 122 and "LINE SIGNAL from NODE" and Figure 17, 95, 93, 91, 12; the multiplexor is downstream from the processing unit)

For claim 8, Karbowiak discloses one receiver per communication path (see fig 20 transceiver) in the form of an

optical receiver (see col 19 line 55 through col 20 line 10 "optical") for receiving (see fig 20 transceiver) and coupling in the information signals from one of

the first and second communication paths into the participant (see fig 17; 14a-b, 15a-b, RX data, TX data; 12),

Karbowiak is silent about:

As regarding claim 1, at least one counter configured for edge detection and controllable receive element timinq and an edqe, wherein the $inpu_t$ signal of a participant is checked for its presence by means of an edge detection in the participant, and wherein if a signal is absent at its input, a participant generates a zero-bit current for subsequent participants.

Yasue from the same or similar field of endeavor discloses the following:

For claim 1, Yasue discloses at least one counter (see fig 4; 132, 136,134) configured for edge detection and controllable receive element timinq and an edqe (see col 4 line 54 through col 6 line 9 "loop is in connection with the transmission device...transition from connection to disconnection...counter 132 determines whether or not logical ONEs sequentially appear in input data from the loop until ...counter 134...counter 136 keeps on operating up to a predetermined value...unless a ZERO is detected in input data from a loop…"; col 8 line 53 through col 9 line 25 "counter 132 is activated…input data and input clock fed thereto from the photoelectric transducer…incremented by each ONE in the input data from the photoelectric transducer 34, reset by a ZERO" ; see Dellow section 0055 "change…from 0 to 1 is detected(known as an "edge")") wherein the $inpu_t$ signal of a participant is checked for its presence (see col 4 line 45-67 "clock down detector…transition from connection to disconnection"; see col 4) by means of an edge detection (see col 4 line 54 through col 6 line 9 "loop is in connection with the transmission device...transition from connection to disconnection...counter 132 determines whether or not logical ONEs sequentially appear in input data from the loop until ...counter 134...counter 136 keeps on operating up to a predetermined value...unless a ZERO is detected in input data from a loop…"; col 8 line 53 through col 9 line 25

"counter 132 is activated…input data and input clock fed thereto from the photoelectric transducer…incremented by each ONE in the input data from the photoelectric transducer 34, reset by a ZERO…clock down to have occurred due to the continuation of the all-one pattern ...clock down..to turn on the interrupt signal.." ; see Dellow section 0055 "change…from 0 to 1 is detected(known as an "edge")") in the participant(see fig figs 1, 5 and 6; ref. char. 10, 12, 14, 16) , and wherein if a signal is absent at its input (see col 4 line 54 through col 6 line 9 "loop is in connection with the transmission device...transition from connection to disconnection...counter 132 determines whether or not logical ONEs sequentially appear in input data from the loop until ...counter 134...counter 136 keeps on operating up to a predetermined value...unless a ZERO is detected in input data from a loop…"; col 8 line 53 through col 9 line 25 "counter 132 is activated…input data and input clock fed thereto from the photoelectric transducer…incremented by each ONE in the input data from the photoelectric transducer 34, reset by a ZERO"), a participant generates a zero-bit for subsequent participants (see col 10 line 42 through col 11 line 15 "clock down..delivers an interrupt signal...so that all-ZERO data is sent out to the first loop…all_ZERO pattern now in the transmission path18 received by the device 12")

Richard from the same filed of endeavor discloses the following features:

For claim 1, Richard disclose zero bit current (see fig 3; IE; see col 7 line 33-63 "current"; current is sent when transmitting signals).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Uzun et al. by using the features, as taught by Yasue

and Richard, in order to provide a synchronization of transmitter and receiver clocks in LAN system (such as the LAN of Uzun (col 4 lines 45-65) , which provides high speed communication (see Suzuki col 1) and also to provide an PLL apparatus that avoids wasteful power consumption (see Suzuki col 3); in order to provide be able to wrap traffic onto a second ring without paying attention to a particular device (master station) and to construct a turn loop with excluding faulty portions and also constructing a new loop which excludes the faulty portions, thus continuing to provide communication service for customers (see column 2 lines 24-45 and column 1 lines 35-42); in order to provide a local network of the ETHERNET type, of which the transmission medium is composed of two pairs of telephone wires, to implement a transceiver, of which a part of the constituent elements are those of the transceiver used in the ETHERNET network with coaxial cable, since telephone wiring is less expensive and usually widely prevalent (prewired) thus avoiding cost for implementing different transmission mediums (see Richard cols 1-2) .

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karbowiak et al. (US 4,663,748) , Yasue (US 4,594,709) , and Richard et al (US 5,079,766), as evidenced by Dellow (US 2003/0020522), as applied to claim 1, further in view of Hamada et al (US 4,530, 085).

For claim 5, the claimed invention is described as in paragraph 2. Additionally, Karbowiak disclose the first (see Figure 17 , 91, 92, 93, 12) and second processing units (see Figure 17 , 91, 92, 93, 12).

For claim 5, Karbowiak , Yasue, and Richard et al are silent about:

As regarding claim 5, Hamada discloses wherein a processing unit is microprocessor system for protocol processing, preferably for HDLC processing.

Hamada et al from the same or similar field of endeavor discloses a reconfiguration control for a loop network with the following features:

As regarding claim 5, wherin a processing unit (see Figure 3, MC100) is a microprocessor system (see column 3 lines 20 "microcomputer") for protocol processing (see column 3 lines 24-25 "HDLC") , preferably for HDLC processing (see column 3 lines 24-25 "HDLC").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Karbowiak , Yasue, and Richard by using the features, as taught by Hamada et al, in order search for a trouble point on the loop (see column 2 lines 17-24).

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karbowiak et al. (US 4,663,748) ,Yasue (US 4,594,709), and Richard et al (US 5,079,766) as evidenced by Dellow (US 2003/0020522), as applied to claim 1, further in view of McCool et al (US 4,951,280).

For claim 9, the claimed invention is described above.

Karbowiak , Yasue, and Richard are silent about:

As regarding claim 9, wherein one decoupling unit per communication path, preferably alight-emitting diode with a trigger circuit, is provided in the participant for decoupling the information signals from the participant into the communication path.

McCool from the same or similar field of endeavor discloses a apparatus for configuring data paths with the following features:

As regarding claim 9, McCool discloses wherein one decoupling unit (see column 8 lines 54-57 "fiber optic transmitter") per communication path (see Figure 1, 42,34,44,32) preferably a light-emitting diode (see column 8 lines 54-57 "LED") with a trigger circuit (see column 8 lines 42-44 "comparator"), is provided in the participant for decoupling the information signals (see column 8 lines 54-57 "differential signal") from the participant (see column 1 lines 20-23 "station") into the communication path (see column 8 lines 54-57 "fiber optical cable").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Karbowiak , Yasue, and Richard, by using the features, as taught by McCool, in order to provide an apparatus for easily configuring a dual-ring and providing modules which provide a flexible architecture for configuring and reconfiguring LAN stations (see column 3 lines 4-13);.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karbowiak et al. (US 4,663,748), Yasue (US 4,594,709), and Richard et al (US 5,079,766) as evidenced by Dellow (US 2003/0020522), as applied to claim 1, further in view of Moriyama et al. (US 4,516,121).

For claim 12 the claimed invention is described above.

Karbowiak , Yasue, and Richard are silent about:

As regarding claim 12, wherein the participant is integrated into an actuator and/or a sensor, preferably into a drive control unit, and especially preferably into a dnve control unit of a control motor.

Moriyama et al from the same or similar field of endeavor discloses a transmission control system with the following features:

As regarding claim 12, Moriyama discloses wherein the participant (see column 2 lines 19 "left terminal"), is integrated into an actuator (see column 2 lines 9-15 "automobile"), preferably into a drive control unit (see column 2 lines 24-25 "control devices" and Figure 2, 217, 215 and column 2 lines 44-46 " 215 a motor…217 a motor"), and especially preferably into a drive control unit (see column 2 lines 24-25 "control devices" and Figure 2, 217, 215 and column 2 lines 44-46 " 215 a motor…217 a motor") of a control motor (see column 2 lines 24-25 "control devices" and Figure 2, 217, 215 and column 2 lines 44-46 " 215 a motor…217 a motor").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Karbowiak , Yasue, and Richard, by using the features, as taught by Moriyama et al., in order to provide a transmission control system which does not fail as a whole system even if a part of the system fails, through a predetermined order transmission (see column 1 lines 31-50);.

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karbowiak et al. (US 4,663,748) in view of Kinoshita et al. (US 7,283,740).

For claim 18, the claimed invention is described above by Karbowiak.

Karbowiak is silent about:

As regarding claim 18, wherein the participants are connected to one another via optical waveguides

Kinoshita from the same or similar field of endeavor discloses a with the following features:

As regarding claim 18, Kinoshita discloses wherein the participants (Figure 1, 12) are connected to one another (see Figure 1, 16 and 18) via optical waveguides (see column 7 lines 35-37 "planar waveguide").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the system of Karbowiak, by using the above features, as taught by Kinoshita, in order to separate reuse gateways, thus providing an improved optical ring network with low cost and high capacity and to provide fine granularity between metro access an metro core environments (see column 1 line 55 through column 2 line 6).

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karbowiak et al. (US 4,663,748) in view of Trussell et al (US 4,539,655).

For claim 19, the claimed invention is described above by Karbowiak.

Karbowiak is silent about:

As regarding claim 19, wherein the communication system is a decentralized control system, having a master slave structure, preferably for controlling and regulating a plurality of control motors.

Trussell et al from the same or similar field of endeavor discloses a with the following features:

As regarding claim 19, Trussell discloses wherein the communication system (see Figure 1, 10) is a decentralized control system (see Figure 1, 14, NODE 1-3; nodes are connected), having a master slave structure (see column 3 lines 10-12 "master" and column 6 lines 2-4 "NCM can be…slave" and column 6 lines 14-16 "slave modules"), preferably for controlling (see column 2 lines 37-38 "controls") and regulating (see column 2 lines 37-38 "controls") a plurality of control motors (see column 2 lines 37-38 "motor controls").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the system of Karbowiak, by using the features, as taught by Trussell et al, in order to provide a microcomputer based monitoring and communication system (see column 1 lines 52-65).

11. Claim 1, 6-8,10,11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Uzun (US 7,142,504) in view of Yasue (US 4,594,709), Suzuki (US 5694441)) and Richard et al (US 5,079,766), as evidenced by Dellow (US 2003/0020522).

For claim 1, Uzun discloses a participant (1) (see Figure 3, 132) of a communication system (see Figure 2a, 101) compromising, having a first communication path (10) (see

Figure 2a, 146) and a second communication path (20) (see Figure 2a, 126), the communication paths (see Figure 2a, 146 and 126) in the communication system (see Figure 2a, 101), having with a double-ring topology (see Figure 2a, 146 and 126) that is configured to operate in contrary directions (see Figure 2a, 146 and 126, note arrows), a first processing unit (see Figure 3,250, 210,220) configured to process (see column 6 lines 18-25 "use the destination information in the packet header to determine if the packet is destined for the host…or destined for the outer ring 146. Local traffic may be forwarded to the host via output 273") information signals (see column 6 lines 14-116 "data"), obtained via the first communication path (see column 6 lines 14-16 "data…along transmission medium 140 of outer ring 146") (lo), and/or to generate and send (see column 7 lines 16-19 "SRPF block…traffic stored in SRAM 225"; SRAM produces data to SRPF)

and sending (see column 8 lines 34-37 "SRAMS 220 servicing the outer ring 146") information signals (see column 7 lines 16-19 "transit traffic") via the first communication path (see column 8 lines 34-37 "SRAMS…220 servicing the outer ring 146")

a second processing 10 unit (21) (see Figure 3, 255, 215,225) configured to process (see column 7 lines 11-16 "packets maybe routed …into line card and into lookup block…Local traffic may be forwarded to the host via output 283. Transit traffic may be forwarded to and stored in …225") information signals (see column 6 lines 14-16 "Data") received via the second communication path (20) (see Figure 3, 121 and column 7 lines 11-14 " data is received…along transmission media 121 of inner ring 126") and/or to generate (see column

7 lines 16-18 "SRPF block…may arbitrate between the transit traffic stored in SRAM"; SRAM 225 produces traffic to the SRPF) and send (see column 8 lines 34-37 "SRAMS…225 servicing the…inner ring 126") information signals (see column 7 lines 34-37 "transit traffic") via the second communication path (see column 8 lines 34-37 "inner ring 126"),

a first activatable coupling (see Figure 3, 235, 504b; see Figure 3, 132) positioned between (see Figure 3, 235 is between 140, 141 and 121, 120 and column 9 lines 35-37 "location of the wrap paths…may be modified") the first communication path (see Figure 3, 140) and the second communication path (20) (see Figure 3, 121), such that upon activation (see column 8 lines 24-26 "SRPF 235 processes") of the first activatable coupling (see Figure 3, 235, 504b), information signals (see column 8 lines 21-27 "transit traffic") are picked up (see column 8 lines 21-27 "flowing out of multiplexer…into SRPF 235") from the first communication path (10) (see Figure 3, 140) and delivered (see column 8 lines 21-27 "SRPF 235 processes the wrapped data" and column 6 lines 45-46 "SRPF fairness logic is a transmission protocol" and Figure 3, "Inner Fwd") to the second communication path (see Figure 3, 120)
(20), wherein a location for delivery (see Figure 3, 504b) to the first activatable coupling (see Figure 3, 235, 504b) is positioned (see Figure 3, 132) being downstream (see Figure 3, 235, 225,215, 255; 235 is downstream of 225,215,255) in the signal travel direction (see Figure 3, 235, 225, 215,255; note arrow connecting the components") of the processing unit (2 1) (see Figure 3, 225,215,255) of the second communication path (20)

(see Figure 3, 121), the processing unit (1 l,21) checks the information signal for its presence (see col 3 lines 1-10 " to detect an idle frame signal" and col 8 lines 5-20 "detection of an idle frame signal").

For claim 6, Uzun discloses wherein a second activatable coupling (23, 12) (see Figure 3, 230, 501b) is also located in the participant (see Figure 3, 132) , between (see Figure 3, 230 is between 140, 141 and 121, 120 and column 9 lines 35-37 "location of the wrap paths…may be modified") the first communication path (10) (see Figure 3, 140) and the second communication path (20) (see Figure 3, 120, 121) , such that upon activation (see column 8 lines 24-26 "SRPF 235 processes") of the second activatable Coupling (see Figure 3, 230, 501b), information signals (see column 7 lines 28-30 "data") are picked up (see Figure 3, 501b) from the second communication path (20) (see Figure 3, 121, 120) and delivered (see Figure 3, 501b delivers to SRPF 230) to the first communication path (lo) (see Figure 3, 140,141), and wherein the delivery (see Figure 3, 501b; note arrow and column 7 lines 24-26 "data wrap paths") to the second activatable coupling (see Figure 3, 230, 501b) is located downstream (see Figure 3, 230, 220,210, 250, ; 230 is downstream from 220,210,250) in the signal travel direction (see Figure 3, 250,210,220,230;note arrows) of the processing unit (1 1) (see Figure 3, 250,210,220) of the first communication path (lo) (see Figure 3, 140)

and furthermore, the pickup (see Figure 3, 501b sends signal to 230) of the second activatable coupling (see Figure 3, 230, 501b) is expediently located downstream (see Figure 3, 501b is located downstream of 225, 215,255) in the participant (see Figure 3, 132) in the signal travel direction (see Figure 3, note arrows between

245,236,235,225,215, and 255) of the processing unit (see Figure 3, 225,215, 255) of the second communication path (20) (see Figure 3, 121, 120).

For claim 7, Uzun discloses wherein the second activatable coupling (see Figure 3, 230, 501b) includes an intermediate connecting line (23) (see Figure 3, 501b) for connecting (see Figure 3b, 501b, 501b bridges ring 121 to 141) the second communication path (20) (see Figure 3, 121,120) to the first communication path (10) (see Figure 3, 140,141) and a second switchover element (22) (see Figure 3, 230), inserted into both the intermediate connecting line (see Figure 3, 501b terminates into 230) and the first communication path (see Figure 3, 140) (lo),

For claim 8, Uzun discloses wherein one receiver (see Figure 3, 250, 255) per communication path (see Figure 3, 250 for 140 and 255 for 120), preferably an optical receiver (see column 5 lines 5-7 "SONET framers"), is provided in the participant (see Figure 3, 250 and 255 are in 132) for receiving (see column 6 lines 18-19 "packets may be routed through physical layer") and coupling in the information signals (see column 6 lines 18-19 "packets may be routed through physical layer into line card 200") from the communication path (see Figure 3, 140 or 120) into the participant (see Figure 3, 132, 200)

For claim 10, Uzun discloses wherein the participant (see Figure 3, 132)) is a secondary participant (1 ', 1") (see column 4 line 33 "node B" and Figure 2a, "B"; nodes a-d are non central nodes) of the communication system (see column 4 lines 26-27 "bi-directional ring topology network").

For claim 11, Uzun discloses wherein the participant (see Figure 2a "Central Node") is a central participant (lz) (see Figure 2a, "Central Node") of the communication system (see column 4 lines 26-27 "bi-directional ring topology network").

Uzun is silent about:

As regarding claim 1, wherein one phase locked loop per communication path is provided, wherein said one phase locked loop per communication path is configured for phase preparation of a received information signal; at least one counter configured for edge detection and controllable receive element timinq and an edqe, wherein the inpu$_t$ signal of a participant is checked for its presence by means of an edge detection in the participant, and wherein if a signal is absent at its input, a participant generates a zero-bit current for subsequent participants.

Suzuki from the same or similar field of endeavor discloses and interface with the following features:

As regarding claim 1, Suzuki dislcoses wherein one phase locked loop (see col 1 line 31 through col 2 line 5 "digital PLL…reception data..phase synchronizing apparatus"; col 4 lines 50-67 "phase of the reception clock"; col 7 line 11-25 "digital PLL…) per communication path is provided (see col 1 line 21-35 "data transfer paths of a LAN"; col 4 lines 14-27 "transfer path") wherein said one phase locked loop per communication path is configured for phase preparation of a received information signal (see col 1 line 31 through col 2 line 5 "digital PLL…reception data..phase synchronizing apparatus"; col 4 lines 50-67 "phase of the reception clock"; col 7 line 11-25 "digital PLL…).

Yasue from the same or similar field of endeavor discloses the following:

For claim 1, Yasue discloses at least one counter (see fig 4; 132, 136,134) configured for edge detection and controllable receive element timinq and an edqe (see col 4 line 54 through col 6 line 9 "loop is in connection with the transmission device...transition from connection to disconnection...counter 132 determines whether or not logical ONEs sequentially appear in input data from the loop until ...counter 134...counter 136 keeps on operating up to a predetermined value...unless a ZERO is detected in input data from a loop…"; col 8 line 53 through col 9 line 25 "counter 132 is activated…input data and input clock fed thereto from the photoelectric transducer…incremented by each ONE in the input data from the photoelectric transducer 34, reset by a ZERO" ; see Dellow section 0055 "change…from 0 to 1 is detected(known as an "edge")") wherein the $inpu_t$ signal of a participant is checked for its presence (see col 4 line 45-67 "clock down detector…transition from connection to disconnection"; see col 4) by means of an edge detection (see col 4 line 54 through col 6 line 9 "loop is in connection with the transmission device...transition from connection to disconnection...counter 132 determines whether or not logical ONEs sequentially appear in input data from the loop until ...counter 134...counter 136 keeps on operating up to a predetermined value...unless a ZERO is detected in input data from a loop…"; col 8 line 53 through col 9 line 25 "counter 132 is activated…input data and input clock fed thereto from the photoelectric transducer…incremented by each ONE in the input data from the photoelectric transducer 34, reset by a ZERO…clock down to have occurred due to the continuation of the all-one pattern ...clock down..to turn on the interrupt signal.." ; see Dellow section 0055 "change…from 0 to 1 is detected(known as an "edge")") in the participant(see fig

figs 1, 5 and 6; ref. char. 10, 12, 14, 16) , and wherein if a signal is absent at its input (see col 4 line 54 through col 6 line 9 "loop is in connection with the transmission device...transition from connection to disconnection...counter 132 determines whether or not logical ONEs sequentially appear in input data from the loop until ...counter 134...counter 136 keeps on operating up to a predetermined value...unless a ZERO is detected in input data from a loop…"; col 8 line 53 through col 9 line 25 "counter 132 is activated…input data and input clock fed thereto from the photoelectric transducer…incremented by each ONE in the input data from the photoelectric transducer 34, reset by a ZERO"), a participant generates a zero-bit current for subsequent participants (see col 10 line 42 through col 11 line 15 "clock down..delivers an interrupt signal...so that all-ZERO data is sent out to the first loop…all_ZERO pattern now in the transmission path18 received by the device 12")

Richard from the same filed of endeavor discloses the following features:

For claim 1, Richard disclose zero bit current (see fig 3; IE; see col 7 line 33-63 "current"; current is sent when transmitting signals).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Uzun et al. by using the features, as taught by Suzuki ,Yasue and Richard, in order to provide a synchronization of transmitter and receiver clocks in LAN system (such as the LAN of Uzun (col 4 lines 45-65) , which provides high speed communication (see Suzuki col 1) and also to provide an PLL apparatus that avoids wasteful power consumption (see Suzuki col 3); in order to provide be able to wrap traffic onto a second ring without paying attention to a particular device (master

station) and to construct a turn loop with excluding faulty portions and also constructing a new loop which excludes the faulty portions, thus continuing to provide communication service for customers (see column 2 lines 24-45 and column 1 lines 35-42); in order to provide a local network of the ETHERNET type, of which the transmission medium is composed of two pairs of telephone wires, to implement a transceiver, of which a part of the constituent elements are those of the transceiver used in the ETHERNET network with coaxial cable, since telephone wiring is less expensive and usually widely prevalent (priwired) thus avoiding cost for implementing different transmission mediums (see Richard cols 1-2) .

12. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uzun (US 7,142,504) in view of Yasue (US 4,594,709),Suzuki (US 5694441) and Richard et al (US 5,079,766), as evidenced by Dellow (US 2003/0020522) as applied to claim 1, further in view of Karbowiak et al. (US 4,663,748).

For claims 2-4, and 7, Uzun, Suzuki, Yasue, and Richard discloses all the claimed invention as described above.

Uzun, Suzuki, Yasue, and Richard are silent about:

As regarding claim 2, wherein pickup of the first activatable coupling is located downstream in the signal travel direction of a processing unit (11) of the first communication path.

As regarding claim 3, wherein the first activatable coupling includes a first intermediate connecting line (13) configured to connect the first communication path (10) to the second

communication path (20), and a first switchover element (22), inserted into both the first intermediate connecting line (13) and the second communication path

As regarding claim 4, wherein the first switchover element (22) is a multiplexer with two inputs and one output, and the inputs are switchable selectively to the output.

Karbowiak et al. from the same or similar field of endeavor discloses a double ring system with the following features:

For claim 2, Karbowiak discloses wherein the pickup of the first activatable coupling (see Figure 17; 94 and Figure 20; 122) is located in the participant (see Figure 1, "NODE" ,11,12,13) downstream (see Figure 20, 122 and "LINE SIGNAL from NODE" and Figure 17, 95; the multiplexor is downstream from the processing unit) in the signal travel direction (see Figure 20, 122 and "LINE SIGNAL from NODE" and Figure 17, 95) of the processing unit (1 1) (see Figure 17 , 91, 92, 93, 12) of the first communication path (1 0) (see Figure 20, 15 and Figure 17, 15b and column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair") .

For claim 3, Karbowiak discloses wherein the first activatable coupling (see Figure 17, 94 and Figure 20, 122, "LINE SIGNAL from NODE" and line connecting 122 to 124) includes a first intermediate connecting line (13) (see Figure 20, "LINE SIGNAL from NODE"), for connecting (see Figure 2, 10 (top of ring), 15, 14; path 15 is wrapped to

path 14 and column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair") the first communication path (10) (see Figure 20; 15) to the second communication path (20) (see Figure 20, 14b),

and a first switchover element (22) (see Figure 20, 122), inserted into both (see Figure 20, 122; 122 is connected to both 14b and signal from node which can be any input/output of 14a, 14b,15, 15a of Figure 20) the first intermediate connecting line (see Figure 20, "LINE SIGNAL from NODE") and the second communication path (20) (see Figure 20, 14b).

For claim 4, wherein the first switchover element (22) (See Figure 20, 122) is a multiplex (see column 28 lines 60-64 "multiplexors…122) with two inputs (see column 28 lines 60-64 "two-input") and one output (see Figure 17, 14b, 126 and 122) and the inputs (see Figure 20, 14a and "LINE SIGNAL from NODE") are switchable selectively to the output (see column 28 lines 57-66 "allow selection of the source of the signal transmitted").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Uzun, Suzuki, Yasue, and Richard, by using the features, as taught by Karbowiak, in order to for each node to participate in maintenance of the system control scheme (see Karbowiak column 1 lines 60-68) and to provide mutual clock synchronization between adjacent nodes in a ring during failure (see Karbowiak column 2 lines 10-12) and a ring topology wherein controlled access to the system is provided by using a scheme of token passing to enable a mixture of voice and

data traffic to be transmitted over the system while maintaining channel efficiency at a high level failure (see Karbowiak column 1);

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uzun (US 7,142,504) in view of Yasue (US 4,594,709) ,Suzuki (US 5694441)), and Richard et al (US 5,079,766) as evidenced by Dellow (US 2003/0020522) as applied to claim 1, further in view of McCool et al (US 4,951,280).

For claim 9, the claimed invention is described above.

Uzun, Suzuki, Yasue, and Richard are silent about:

As regarding claim 9, wherein one decoupling unit per communication path, preferably alight-emitting diode with a trigger circuit, is provided in the participant for decoupling the information signals from the participant into the communication path.

McCool from the same or similar field of endeavor discloses a apparatus for configuring data paths with the following features:

As regarding claim 9, McCool discloses wherein one decoupling unit (see column 8 lines 54-57 "fiber optic transmitter") per communication path (see Figure 1, 42,34,44,32) preferably a light-emitting diode (see column 8 lines 54-57 "LED") with a trigger circuit (see column 8 lines 42-44 "comparator"), is provided in the participant for decoupling the information signals (see column 8 lines 54-57 "differential signal") from the participant (see column 1 lines 20-23 "station") into the communication path (see column 8 lines 54-57 "fiber optical cable").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Uzun, Suzuki, Yasue, and Richard, by using the features, as taught by McCool, in order to provide an apparatus for easily configuring a dual-ring and providing modules which provide a flexible architecture for configuring and reconfiguring LAN stations (see column 3 lines 4-13);.

14. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uzun (US 7,142,504) in view of Yasue (US 4,594,709) , Suzuki (US 5694441), and Richard et al (US 5,079,766) as evidenced by Dellow (US 2003/0020522) as applied to claim 1, further in view of Moriyama et al. (US 4,516,121).

For claim 12 the claimed invention is described above.

Uzun, Suzuki, Yasue, and Richard are silent about:

As regarding claim 12, wherein the participant is integrated into an actuator and/or a sensor, preferably into a drive control unit, and especially preferably into a dnve control unit of a control motor.

Moriyama et al from the same or similar field of endeavor discloses a transmission control system with the following features:

As regarding claim 12, Moriyama discloses wherein the participant (see column 2 lines 19 "left terminal"), is integrated into an actuator (see column 2 lines 9-15 "automobile"), preferably into a drive control unit (see column 2 lines 24-25 "control devices" and Figure 2, 217, 215 and column 2 lines 44-46 " 215 a motor…217 a motor"), and especially preferably into a drive control unit (see column 2 lines 24-25 "control devices"

and Figure 2, 217, 215 and column 2 lines 44-46 " 215 a motor…217 a motor") of a control motor (see column 2 lines 24-25 "control devices" and Figure 2, 217, 215 and column 2 lines 44-46 " 215 a motor…217 a motor").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Uzun, Suzuki, Yasue, and Richard, by using the features, as taught by Moriyama et al., in order to provide a transmission control system which does not fail as a whole system even if a part of the system fails, through a predetermined order transmission (see column 1 lines 31-50);.

15. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uzun (US 7,142,504) in view of Suzuki (US 5694441).

For claim 15, Uzun discloses a communication system (5) (see column 4 lines 26-27 "bi-directional ring topology network") for directed communication (see column 4 lines 50-53 "connectd to branch nodes 131-135" and column 4 lines 57-59 "inner and outer rings…transport data") between participants (see column 4 lines 50-52 "130…nodes 131-135") of the communication system (see column 4 lines 26-27 "bi-directional ring topology network"), having one central participant (see column 4 lines 50-52 "central node 130") (lz) and at least one secondary participant (l', I") (see column 4 lines 50-52 "nodes 131-135"), wherein at least one of the participants (see column 4 lines 50-52 "nodes 131-135") comprises a first communication path (10) (see Figure 1, 15) and a second communication path (20) (see Figure 1, 14), the communication paths (see Figure 1, 14 and 15) in the communication system see column 2 lines 16-18 "communication

system") having a double-ring topology (see Figure 1, 11, 14, 15) that is configured to operate in contrary directions (see Figure 1, 14 and 15, note arrows)

a first processing unit (1 1) (see Figure 17 , 91, 92, 93, 12) configured to process (see column 28 lines 14-18 "performs the functions of the RXM..TXM…RRM" and column 28 lines 34-47 "Clock Decoder…clocking information which is used to synchronise the PLL")

information signals (see column 28 lines 25-30 "up-ring link-signal") , obtained (see column 28 lines 25-30 "Receive Data") via the first communication path (lo) (see Figure 17, 15b) , andlor to generate (see column 28 lines 25-30 "generate") and send (see column 28 lines 30-33 "down-ring signals are in turn interfaced to …15a") information signals (see column 28 lines 25-30 "down-ring link-signal") via the first communication path (see Figure 17, 15a) ;a second processing unit (21) (see Figure 17 , 91, 92, 93, 12), configured to process (see column 28 lines 14-18 "performs the functions of the RXM..TXM…RRM" and column 28 lines 34-47 "Clock Decoder…clocking information which is used to synchronise the PLL") information signals (see column 28 lines 25-30 "up-ring link-signal") received (see column 28 lines 25-30 "Receive Data") via the second communication path (see Figure 17b, 14a)

(20) and/or to generating (see column 28 lines 25-30 "generate") and sending (see column 28 lines 30-33 "down-ring signals are in turn interfaced to …14b") information signals (see column 28 lines 25-30 "down-ring link-signal") via the second communication path (see Figure 17, 14b); a first activatable coupling positioned (see Figure 17, 94 and Figure 20, 122, "LINE SIGNAL from NODE" and line connecting 122

to 124; see Figure 17, 94, "Liu 11" and Figure 1, "NODE " and 11) between (see Figure 17, 94 and Figure 20, 122, "UP-RING", 123, "LINE TO SIGNAL", "LINE SIGNAL and column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair"), the first communication path (10) (see Figure 1, 15 and Figure 20, 15a, 15) and the second communication path (20) (see Figure 1, 14 and Figure 20, 14a, 14b), such

that upon activation (column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair") of the first activatable coupling (see Figure 17, 94 and Figure 20, 122, "LINE SIGNAL from NODE" and line connecting 122 to 124) information signals (see column 4 lines 65-68 "data flow") are picked up (see column 4 line 65 through column 5 line 1 "reconfigures its link connections and Figure 2; 10 (top of circle), 14, 15 and "DATA FLOW") from the first communication path (10) (see Figure 2, 15) and delivered (see Figure 2, 10 (top of circle), data flow is wrapped around from 15 to 14, because of failed link) to the second communication path (see Figure 2, 14), wherein a location for delivery (see column 28 lines 62-66 "multiplexors.. 122 are controlled by the NIU…allow selection of…14a, 15a, 14b, 15b either the node or the other link-pair") to the first activatable coupling (see Figure 17, 94 and Figure 20, 122, "LINE SIGNAL from NODE" and line connecting 122 to 124) is positioned downstream (see Figure 20, 122 and "LINE SIGNAL from NODE" and Figure 17, 95; the multiplexor is downstream from the processing unit) in a signal travel direction (see Figure 20, 122 and "LINE SIGNAL from NODE" and Figure 17, 95) of a processing unit (2 1) (see Figure

17 , 91, 92, 93, 12) of the second communication path (20) (see Figure 20, 14b and Figure 17, 14b); and wherein the processing unit (1 l,21) (see Figure 17 , 91, 92, 93, 12) checks the information signal (see column 4 lines 65-67 "synchronization signals") for its presence (see column 4 lines 65-67 "detect a loss of synchronization signals"), and one phase locked loop (see Figure 18, 107 and column 18 lines 19-23 "phase locked loops") is provided (see Figure 17 , 92) in the participant (1) (see Figure 1, "NODE" ,11,12,13) for phase preparation (see column 18 lines 39-44 "PLLs…absorb phase jitter" and column 19 lines 5-9 "PLL…maintain a stead-state phase error which will absorb ") of the received information signal (see Figure 17; 96 and Figure 18, "LINE SIGNAL").

For claim 16, Uzun discloses wherein the communication system (see column 4 lines 26-27 "six-node bidirectional ring topology") is embodied with double-ring topology (see column 4 lines 26-27 "six-node bidirectional ring topology" and Figure 2a, 101), with two communication paths (10,20), (see Figure 2a, 146,126) each annularly closed (see Figure 2a, 146,126).

For claim 17, Uzun discloses wherein the information signal (see column 4 lines 55-54 "data") travel (see column 4 lines 57-60 "Inner and outer rings…may concurrently transport data in opposing directions") in the two communication paths (see Figure 2a, 126, 146) is effected in contrary directions (see Figure 2a, 126, 146; not arrows and see column 4 lines 57-60 "Inner and outer rings…may concurrently transport data in opposing directions").

Uzun is silent about:

As regarding claim 1, wherein one phase locked loop per communication path is provided, wherein said one phase locked loop per communication path is configured for phase preparation of a received information signal;

Suzuki from the same or similar field of endeavor discloses and interface with the following features:

As regarding claim 15, Suzuki dislcoses wherein one phase locked loop (see col 1 line 31 through col 2 line 5 “digital PLL…reception data..phase synchronizing apparatus”; col 4 lines 50-67 “phase of the reception clock”; col 7 line 11-25 “digital PLL…”) per communication path is provided (see col 1 line 21-35 “data transfer paths of a LAN”; col 4 lines 14-27 "transfer path") wherein said one phase locked loop per communication path is configured for phase preparation of a received information signal (see col 1 line 31 through col 2 line 5 “digital PLL…reception data..phase synchronizing apparatus”; col 4 lines 50-67 “phase of the reception clock”; col 7 line 11-25 “digital PLL…).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Uzun et al. by using the features, as taught by Suzuki, in order to provide a synchronization of transmitter and receiver clocks in LAN system (such as the LAN of Uzun (col 4 lines 45-65) , which provides high speed communication (see Suzuki col 1) and also to provide an PLL apparatus that avoids wasteful power consumption (see Suzuki col 3);

16. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uzun (US 7,142,504) in view of Suzuki (US 5694441) as applied to claim 15, further in view of Kinoshita et al. (US 7,283,740).

For claim 18, the claimed invention is described above by Uzun, and Suzuki.

Uzun, and Suzuki are silent about:

As regarding claim 18, wherein the participants are connected to one another via optical waveguides

Kinoshita from the same or similar field of endeavor discloses a with the following features:

As regarding claim 18, Kinoshita discloses wherein the participants (Figure 1, 12) are connected to one another (see Figure 1, 16 and 18) via optical waveguides (see column 7 lines 35-37 "planar waveguide").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Uzun, Suzuki, by using the features, as taught by Kinoshita, in order to separate reuse gateways, thus providing a network with low cost and high capacity and to provide fine granularity between metro access an metro core environments (see column 1 line 55 through column 2 line 6).

17. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uzun (US 7,142,504) in view of Suzuki (US 5694441) as applied to claim 15, further in view of Trussell et al (US 4,539,655).

For claim 19, the claimed invention is described above by Uzun, and Suzuki.

Uzun, and Suzuki are silent about:

As regarding claim 19, wherein the communication system is a decentralized control system, having a master slave structure, preferably for controlling and regulating a plurality of control motors.

Trussell et al from the same or similar field of endeavor discloses a with the following features:

As regarding claim 19, Trussell discloses wherein the communication system (see Figure 1, 10) is a decentralized control system (see Figure 1, 14, NODE 1-3; nodes are connected), having a master slave structure (see column 3 lines 10-12 "master" and column 6 lines 2-4 "NCM can be…slave" and column 6 lines 14-16 "slave modules"), preferably for controlling (see column 2 lines 37-38 "controls") and regulating (see column 2 lines 37-38 "controls") a plurality of control motors (see column 2 lines 37-38 "motor controls").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Uzun, and Suzuki, by using the features, as taught by Trussell et al, in order to provide a microcomputer based monitoring and communication system (see column 1 lines 52-65).

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenan Cehic whose telephone number is (571) 270-3120. The examiner can normally be reached on Monday through Friday 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Kenan Cehic/

Examiner, Art Unit 2416

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